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ABSTRACT

Factors which influence the acquisition of a second language within the framework of the British educational system are examined in this study. An ongoing, 10-year, language experiment (1964-74) involving 18,000 students ranging in age from 8 to 13, concentrates on determining the desirability and practicability of starting modern language programs in the elementary schools of England. Principal objectives of the experiment examined in this report include: (1) evaluation of the effect of the introduction of French at the primary level on achievement in other areas of the curriculum, (2) assessment over a period of years of the level of achievement in French of the pupils involved in the experiment, (3) evaluation of the influence of socio-economic and attitudinal factors on the acquisition of a second language, and (4) investigation of the organizational and pedagogical problems posed by the introduction of second-language teaching at the primary school. (RL)

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# A Study of the Cognitive, Affective and Socio-economic Factors Influencing Second-Language Acquisition.

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## A Study of the Cognitive, Affective and Socio-economic Factors Influencing Second-Language Acquisition.

In 1963 a government-sponsored teaching experiment was set up in a representative sample of British primary schools, which had been chosen to provide 'a sufficient variety of educational conditions to enable conclusions to be drawn about the general desirability and practicability of starting a modern language in junior schools'.[1] The modern language chosen for the experiment was French and the target population was to consist of all eight-year-old pupils in the schools taking part in the experiment. The eventual results of the experiment were to be evaluated over a 10-year period (1964-1974) by an independent research institute, the National Foundation for Educational Research. The present paper outlines some of the findings which have arisen from this ongoing programme of research.

The evaluation of the teaching of French in British primary schools takes the form of a longitudinal study of three year-groups or 'cohorts' of primary school pupils. The experimental sample contains approximately 18,000 pupils, selected by age alone and therefore representing a wide range of abilities. All pupils are being studied from the age of eight, when they begin learning French, until the age of 13, when they complete their second year of secondary school and their fifth year of French instruction. A follow-up study of the pupils in the second experimental cohort has also been undertaken : these pupils are being studied from the age of eight until the age of 16, when they complete their fifth year in secondary school. The main research project is being complemented by an intensive study of a sub-sample of pupils, selected for their extreme performance on various measures of achievement. The principal objectives of the research project may be summarised as follows : to evaluate the effect of the introduction of French at the primary level on achievement in other areas of the curriculum; to assess over a period of years the level of achievement in French of the pupils taking part in the experiment; to evaluate the influence of socio-economic and attitudinal factors on the acquisition of a second language; to investigate

1. Press statement issued by the Ministry of Education on 13th. March 1963.

the organisational and pedagogic problems posed by the introduction of second-language teaching at the primary school level.

The pupils taking part in the experiment are taught French from the age of eight by non-specialist class teachers using audio-visual materials. The development of appropriate tests of achievement in French has therefore been a central concern of the project. The order in which tests of achievement in French have been developed has necessarily been determined by the sequence in which the pupils have been introduced to the various language skills : tests of listening comprehension and of ability to speak in French were developed first for use during the pre-reading stage of language acquisition; a full battery of French tests (including group tests of listening comprehension, reading comprehension and written expression and an individually-administered speaking test) was then developed for use after three years' instruction in French, when the written script had been introduced; a similar but more advanced battery of French tests was subsequently developed for use after five years' instruction and a final battery of French tests is currently being developed to measure achievement in French after eight years' instruction. The French achievement tests which have been used in the study up to the present time have been administered both to the experimental sample and to control groups of appropriate age and length of exposure to French. A battery of attainment tests in the mother tongue (Verbal Intelligence, English, Reading, Mathematics) has also been administered to the experimental sample, both before exposure to French and at the completion of three years' French instruction. The same battery of attainment tests has also been administered to control groups of pupils not receiving instruction in French. Measures of pupils' attitudes towards learning French and of teachers' attitudes towards the advisability of teaching French to the whole ability range have also been developed. In addition, a schedule of classroom observation and individual interviewing of pupils and teachers has been maintained throughout the experimental period.

Studies measuring the language skills of primary school children in Britain have commonly reported significant differences in achievement in favour of the girls. Girls tend to score consistently higher than boys on tests involving verbal ability, particularly during the early school years. As children approach the transfer to secondary school, however, sex differences in language achievement tend to diminish (Douglas, 1964; Wisenthal, 1965; Morris, 1966; Barker-Lunn, 1970). The findings of the

present study, insofar as they concern the pupils' performance on tests measuring attainment in the mother tongue, show a similar trend : at the age of eight, the girls score significantly higher than the boys on all tests involving verbal skills; by the time the pupils reach the age of eleven, however, the only test on which the girls still perform at a significantly higher level than the boys is a test of written English (Burstall, 1970b). The results of the French tests do not conform to a similar pattern. Throughout the study, the girls perform significantly better than the boys on all tests measuring achievement in French. Sex differences are particularly marked on tests measuring reading and writing skills in French. In each of the three year-groups under study, the girls' superior level of achievement is evident after one year of learning French and is maintained undiminished throughout the period of investigation.

This is not to suggest that girls are, in some mysterious way, better endowed than boys to reach a high level of achievement in French. The available evidence tends rather to support the view that achievement in second-language learning is largely determined by social and cultural pressures (Gardner and Lambert, 1959; Lambert et al., 1961; Gardner, 1966; Feenstra 1968 and 1969). There can be little doubt that the girls taking part in the present study are more positively-motivated than the boys to achieve success in learning French. The view that foreign-language learning is a more suitable accomplishment for girls than boys is still current in British society and is reinforced by the fact that a knowledge of foreign languages has a direct and obvious application to the future employment possibilities open to girls, but is less clearly relevant to boys' occupational choices. Similarly, parents' attitudes towards the value of teaching French at the primary level appear to be strongly influenced by their assessment of the relevance of a knowledge of French to their children's future employment prospects : in consequence, girls receive much more overt encouragement to learn the language than boys do. The powerful effect of positive motivation upon achievement and the further reinforcing effect of high achievement upon motivation for subsequent learning could well account for much of the girls' superior performance. There are some indications, however, that this situation could change with changing attitudes towards greater involvement in European affairs. Boys seem more aware than their parents of the changes in patterns of employment which could result from Britain's entry into the European Economic Community

and which would confer a considerable practical value on foreign-language skills. It seems reasonable to suppose that a general shift towards a more favourable evaluation of the 'pay-off value' of learning French could result in an enhanced level of achievement for boys.

The relationship between teachers' attitudes and expectations and pupils' level of achievement has been highlighted in a number of recent studies (Johannesson, 1967; Pidgeon, 1970; Rosenshine, 1971). Some early findings of the present study (Burstall 1968 and 1970a) suggested an association between the attitude of the head of a school towards the teaching of French to the whole ability range and the level of achievement in French reached by the less able pupils in that school : low-achieving pupils in schools where the head had expressed a positive attitude towards the teaching of French obtained significantly higher scores on the French tests than did similar pupils in schools where the head had expressed a negative attitude. Low-achieving pupils reached their highest level of achievement in French when taught in heterogeneous groups in schools with a head favourable to the teaching of French to the whole ability range and their lowest when taught in homogeneous groups in schools with a head unfavourable to the French-teaching experiment.

These early findings have subsequently been confirmed and extended : analysis of the French test data gathered at the end of the primary stage of the experiment shows that the mean scores on each of the French achievement tests obtained by pupils in schools where the head has a positive attitude towards the teaching of French are significantly higher than those obtained by similar pupils in schools where the attitude of the head is a negative one (Burstall, 1970b). This finding is not confined to low-achieving pupils, but applies to the whole experimental sample. It also appears to be specific to French : no association has been found, for instance, between the attitude of the head towards the teaching of French and the pupils' performance on tests of attainment in the mother tongue.

The pattern of results obtained from the administration both of tests of attainment in the mother tongue and tests of achievement in French points to a linear relationship between test score and parental occupation. For pupils of both sexes in each type of school, high mean

scores on all tests used in the study coincide with high-status parental occupation and low mean scores with low-status parental occupation. A similar association between socio-economic background and achievement in school has been reported by a number of other research workers (Douglas, 1964; Morris, 1966; Goodacre, 1968; Barker-Lunn, 1970), but it was thought possible that the influence of socio-economic factors might be less potent in the acquisition of a second language, since all pupils would begin their study of the language from a standpoint of equal ignorance. This was to underestimate the powerful influence of motivational factors on achievement : children with a previous history of failure tend to develop low aspirations and a negative self-image, reinforced by the perception that their teachers have equally low expectations of their success. Such children in no way approach a new learning experience on a footing of equality with children whose previous high achievement has led to high aspirations and an expectation of success. Furthermore, children with parents in higher-status occupations tend to receive more parental support when they approach new learning experiences than do those with parents in lower-status occupations (Douglas, 1964; Barker-Lunn, 1970). Differences in achievement between pupils from different socio-economic strata become more pronounced as the pupils proceed through the educational system. The association between parental occupation and achievement, evident during the primary stage of the study, becomes even more prominent during the secondary stage, when the pupils in the experimental sample are distributed unevenly among the different types of secondary school. Each type of secondary school differs in the socio-economic composition of its intake : at the one extreme, the grammar schools draw their pupils mainly from the highest-status parental occupation categories; at the other, the secondary modern schools draw their pupils mainly from the lowest-status parental occupation categories. These disparities in the socio-economic structure of the different types of secondary school are paralleled by significant differences in the pupils' level of achievement in French : the highest level of achievement is reached by the grammar school pupils, the lowest by the secondary modern school pupils.

The experimental sample contains a number of small primary schools, situated in fairly remote rural areas. These schools have too small an enrolment (from 16 to 160 junior-age pupils on roll) to permit homogeneous age-grouping and too few teachers (usually no more than two) to allow the head to play anything but an active teaching role. Classes usually contain

pupils differing widely in age and ability and classroom conditions are often inimical to the teaching of French by audio-visual means. Nevertheless, in spite of these apparently adverse conditions, the pupils in the small schools have maintained, throughout the period under study, a performance consistently superior to that of the pupils in the larger schools in the sample on all tests of achievement in French. At first sight, this superiority might be attributable to the small size of the classes in which pupils in small schools are taught French. This does not appear to be the case, however : no association has been found between size of class and level of achievement in French. The structure of the class and certain of the teacher's characteristics emerge as more important factors. Over the sample as a whole, level of achievement in French tends to be higher in mixed-ability classes than in streamed classes : the classes in the small schools are too small to stream and tend to be heterogeneous with regard to age and ability. In such circumstances the individual pupil is not in direct competition with others of his own age-group and the concept of a 'standard' of achievement, which a pupil of a given age 'ought' to reach, is difficult for either teacher or pupil to acquire. The classroom situation in the small school approaches that of individualised learning and lacks the negative motivational characteristics of the competitive classroom situation in which success for a few can only be achieved at the expense of failure for many.

Teachers, as well as their classes, have different characteristics in small and large schools. Teachers in small schools are, on average, older than those in large schools and tend, therefore, to have had greater teaching experience. They also tend to have acquired all their teaching experience in the primary school, often in one school only. Teachers in large schools tend to have had a more varied teaching experience and to be considerably more mobile. Teachers in small schools tend to live in the village which the school serves and to occupy a high-status role in the life of the community; teachers in large schools tend to live some distance from their place of employment and often have few points of contact with the community in which the school is situated. The head of a small school tends to carry a large part of the teaching load and to spend much of his day in direct contact with his pupils; it is rare for the head of a large school to spend much of his time teaching or to develop close relationships with his pupils. It is suggested that these observed differences in the organisation of small and large schools may well be factors which contribute to the higher level of achievement in French reached by the pupils in the small rural schools.

Pupils' attitudes towards learning French have been measured on several occasions and have remained remarkably constant over the period under study. Attitudes towards learning French differ significantly according to the pupil's sex, socio-economic background, contact with France, regional location and future employment prospects. In brief, girls have more favourable attitudes towards learning French than boys and pupils from the higher socio-economic strata have more favourable attitudes than those from the lower socio-economic strata. Pupils who have been to France at some point during the experiment have more favourable attitudes towards France and the French than those who have not, but it must be noted that pupils from the more economically-favoured homes are disproportionately represented in the number of pupils who have been to France. Pupils who live in the South of England are more favourably inclined towards learning French than are those who live in the North : the latter tend to consider themselves psychologically closer to Scandinavia than to France. Pupils who regard a knowledge of French as relevant to their future employment prospects tend to view learning French with considerably more favour than do those who can discern no such relevance. Perhaps the most striking general characteristic of the pupils' attitudes towards learning French, however, is their stability over time. Attitudes have been clearly formulated by the age of eleven and undergo little change during the secondary stage of the experiment. When the pupil's attitude is a negative one, increasing motivational problems are inevitable during the secondary stage of learning French. A study of the attitudes of one of the secondary-stage control groups indicates that a higher proportion of pupils who have only studied French for two years have favourable attitudes towards learning French than have those who have been studying French for five years : this is particularly true of the boys in the sample.

For pupils of both sexes, level of achievement in French, at both the primary and the secondary level, appears to be closely associated with attitudes towards learning French. On each of the French achievement tests, mean scores for pupils who have a favourable attitude towards learning French are significantly higher than those for pupils whose attitude towards learning French is unfavourable. The direction of causality of this finding has yet to be elucidated.

The results of the experiment to date indicate that primary school pupils introduced to the study of French at the age of eight reach a higher level of achievement in oral French than do secondary school pupils who

have studied the language for an equivalent period of time, having begun their study at the age of eleven : the latter reach a higher level of achievement than the primary school pupils in the skill-areas of reading and writing. When the experimental pupils are compared at the age of 13 with control pupils of the same age who were not introduced to French in the primary school, the performance of the experimental group on all tests of achievement in French is superior to that of the control group. The trend of these results is similar to that reported by Carroll (1967) in his survey of the foreign-language attainments of language majors in American colleges and universities. As Carroll points out, the most conservative interpretation which the data permit is that the attainment of skill in a foreign language is a function of the amount of time spent studying that language. Recent data from the present study offer further support for an interpretation of this kind : when experimental pupils are compared after five years' instruction in French with a control group of older pupils who have studied French for an equal length of time, the level of achievement of the control group is superior to that of the experimental group on all French tests except a test of speaking skill. The findings of the study, to date, do not therefore suggest that the effectiveness of foreign-language study necessarily increases with the youthfulness of the student.

Before the experiment began, it was hypothesised that the introduction of French into the primary school curriculum might affect the children's acquisition of the basic skills. Since the daily provision of French lessons would inevitably curtail the time available for other school activities, the possibility arose that the children's mastery of the basic skills and, in particular, of mathematical skills, might in the long run be adversely affected by the introduction of French. It was equally possible that the stimulus of learning a second language might serve to increase the children's understanding of their own language, and so exert a beneficial influence on the development of verbal skills in the mother tongue. In order to investigate these possibilities, it was necessary to assess the experimental pupils' level of general attainment, both before and after the introduction of French, and to compare this level of attainment with that of control pupils who did not receive any foreign-language instruction during the period under study. A battery of attainment tests, designed to measure both verbal and mathematical skills, was therefore administered to all experimental and control pupils at the outset of the experiment and,

again, three years later, when the children reached the end of their primary school career.

A comparison of the mean scores obtained by both experimental and control pupils on each occasion of testing does not indicate that the introduction of French exerts any significant influence on attainment in other areas of the curriculum. There are a few minor variations in test performance, but each of these is associated with slight variations in the social composition of the sub-groups involved. On none of the attainment tests used in the study does the performance of the experimental and control groups differ to any significant extent. The experimental evidence does not, therefore, lend support to the view that the introduction of a second language at the primary stage depresses the level of general attainment, but neither does it encourage the belief that instruction in a second language necessarily promotes the development of verbal skills in the mother tongue. It must be emphasised that the findings reported above are specific to the battery of tests used in the experiment and cannot be generalised to other areas of the curriculum; they are, nevertheless, in harmony with findings reported by a number of other investigators (Geigle, 1957; Vollmer and Griffiths, 1962; Johnson et al., 1963; Leino and Haak, 1963).

The findings outlined above should be interpreted with caution, since they derive from an ongoing programme of research and are necessarily incomplete and inconclusive. Nevertheless, it is hoped that they serve to throw some light on the complex of factors which influence the acquisition of a second language within the framework of the British educational system.

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